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EXAMINER

LEROUX, ETIENNE PIERRE

ART UNIT PAPER NUMBER

2161

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/819,612

Applicant(s)

SUTO, AKIO

Examiner

Etienne P LeRoux

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Claim Status

Claims 1-19 are pending. Claims 1-19 are rejected as detailed below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 7-9 and 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat No 6,367,029 issued to Mayhead et al (hereafter Mayhead).

Claim 1:

Mayhead discloses:

- a database memory for storing a database which is updated by the distributed data processing process performed by said client [*file store primary 1, Fig 2, col 5, lines 12-25*]
- a replication trigger generator for generating a replication trigger based on the updating of said database by the distributed data processing process performed by said clients connected to one of the servers [*replication manager 8, Fig 2, col 7, lines 3-20*]

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- an updating information transfer unit for transferring updating information of said database to another one of the servers based on said replication trigger [*file store backup 2 Fig 2 and col 5, lines 45-60*]
- a database updating processor for updating said data base based on the updating information transferred from the other server [*file server system 60, Fig 1, col 4, lines 53-58*]
- an archive data memory for storing updating information of said database as archive data [*logger 10, Fig 2,col 9, line 62 through col 10, line 3*]
- wherein at least part of said database is recovered using said archive data [*col 2, lines 59-64*]

Claim 2:

Mayhead discloses a connection information manager for managing connection information of a connection destination server to which the clients are connected and a connection information changer for changing the connection information of the connection destination server, the arrangement being such that if any said server suffers a fault, said connection information is changed by said connection information changer, and the distributed data processing process performed by the clients connected to the server which suffers the fault is continued under the management of another normal on of the servers to which said connection information is changed [col 12, lines 31-39]

Claim 7:

Mayhead discloses:

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- updating a database according to the distributed data processing process performed by said clients [file store primary 1, Fig 2, col 5, lines 12-25],
- generating a replication trigger based on the updating of said database by the distributed data processing process performed by aid clients connected to one of the servers [replication manager 8, Fig 2, col 7, lines 3-20];
- transferring updating information of said database to another one of the servers based on said replication trigger [file store backup 2, Fig 2 and col 5, lines 45-60]
- updating said database based on the updating information transferred from the other server [logger 10, Fig 2, col 9, line 62 through col 10, line 3]
- storing the updating information of said database as archive data [col 9, line 62 through col 10, line 3]
- wherein at least part of said database is recovered using said archive data [col 2, lines 59-64]

Claim 8:

Mayhead discloses if any of said servers suffers a fault, changing a connection destination of the clients connected to the server which suffers the fault to another normal one of the servers; and continuing the distributed processing process performed by the clients connected to the server under the management of the other normal server [col 12, lines 31-39].

Claim 9:

Mayhead discloses shutting off all the clients connected to said server, setting again information of the connection destination of the clients, connecting the clients to said server

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according to the set information and resuming the distributed data processing process in a normal connection state [col 2, lines 30-64].

Claim 16:

Mayhead discloses wherein the clients connected to any one of said servers are different from the clients connected to another one of said servers [col 2, lines 59-64]

Claim 17:

Mayhead discloses wherein said database updating processor in each of said servers updates said database based on the updating information, the updating information is generated upon an updating request from one of said clients connected to said server, and said database updating processor transfers the updating information of said database to another one of said servers [col 5, lines 45-60].

Claim 18:

Mayhead discloses wherein said database updating processor determines whether the updating information is generated by said server or is transferred from the other one of said servers, and wherein when it is determined that the updating information is transferred from the other one of said servers, a replication trigger generation inhibition is issued to said replication trigger generator [col 2, lines 45-50]

Claim 19:

Mayhead discloses wherein the updating of the database occurs prior to the generating of the replication trigger [col 8, lines 35-45, col 7, lines 45-50]

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3, 4, 10-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayhead as applied to claims 1, 2, 7-9 and 16-18 in view of US Pat No. 5,758,067 issued to Makinen et al (hereafter Makinen).

Claim 3:

Mayhead discloses the elements of claim 1 as noted above.

Mayhead discloses a backup data memory for storing back-up data produced by the backup process performed while said database is in operation wherein said database is recovered using said backup data and said archive data [col 2, lines 59-64].

Mayhead fails to disclose a backup processor for performing backup process at predetermined time intervals while said database is in operation.

Makinen discloses a backup processor for performing backup process at predetermined time intervals while said database is in operation [col 3, lines 1-18].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mayhead to include a backup processor for performing backup process at predetermined time intervals while said database is in operation as taught by Makinen.

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The ordinarily skilled artisan would have been motivated to modify Makinen per the above for the purpose of ensuring that reliable system recovery can be performed [col 3, lines 1-18].

Claim 4:

Mayhead discloses the elements of claims 1 and 2 as noted above.

Mayhead fails to disclose a backup processor for performing backup process at predetermined time intervals while said database is in operation a backup memory for storing backup data produced by the backup process performed while said database is on operation.

Makinen discloses a backup processor for performing backup process at predetermined time intervals while said database is in operation a backup memory for storing backup data produced by the backup process performed while said database is on operation [col 3, lines 1-18].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mayhead to include a backup processor for performing backup process at predetermined time intervals while said database is in operation a backup memory for storing backup data produced by the backup process performed while said database is on operation as taught by Makinen.

The ordinarily skilled artisan would have been motivated to modify Mayhead per the above for the purpose of ensuring that reliable system recovery can be performed [col 3, lines 1-18].

Claim 10:

Mayhead discloses the elements of claim 7 as noted above.

Mayhead fails to disclose performing a backup process at predetermined time intervals while said database is in operation and saving backup data produced by the backup process performed; generating and saving archive data based on the updating information of the database which is generated after the backup process performed while said database is in operation has started; and if one of said servers suffers a fault, copying said backup data of another normal one of the servers, and recovering the database from said archive data of the other normal server.

Makinen discloses performing a backup process at predetermined time intervals while said database is in operation and saving backup data produced by the backup process performed; generating and saving archive data based on the updating information of the database which is generated after the backup process performed while said database is in operation has started; and if one of said servers suffers a fault, copying said backup data of another normal one of the servers, and recovering the database from said archive data of the other normal server [col 3, lines 1-18].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mayhead to include performing a backup process at predetermined time intervals while said database is in operation and saving backup data produced by the backup process performed; generating and saving archive data based on the updating information of the database which is generated after the backup process performed while said database is in operation has started; and if one of said servers suffers a fault, copying said backup data of another normal one of the servers, and recovering the database from said archive data of the other normal server as taught by Makinen.

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The ordinarily skilled artisan would have been motivated to modify Mayhead per the above for the purpose of that reliable system recovery can be performed [col 3, lines 1-18].

Claim 11:

The combination of Mayhead and Makinen discloses the elements of claims 7 and 10 as noted above.

The combination of Mayhead and Makinen discloses copying said backup data while the clients are being continuously operated by said other normal server [Mayhead col 2, lines 30-50]

Claim 12:

The combination of Mayhead and Makinen discloses the elements of claims 7 and 8 as noted above.

The combination of Mayhead and Makinen discloses performing a backup process at predetermined intervals while said database is in operation and saving backup data produced by the backup process performed [generating and saving archive data based on the updating information of the database which is generated after the backup process performed while said database is in operation has started, and if one of said servers suffers a fault, copying said backup data of another normal one of the servers, and recovering the database from said archive data of the normal server [Makinen, col 3, lines 1-18]

Claim 14:

The combination of Mayhead and Makinen discloses the elements of claims 1 and 3 as noted above.

The combination of Mayhead and Makinen discloses wherein a file copy operation is used to store the backup data in the backup data memory [Fig 1 and col 4, lines 53-67].

3. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayhead as applied to claims 1, 2, 7-9 and 16-18 in view of US Pat No. 5,347,463 issued to Nakamura et al (hereafter Nakamura).

Claim 5:

Mayhead discloses the elements of claim 1 as noted above.

Mayhead fails to disclose a server for managing one of the clients which is of a production management system which is of the object to be controlled a server for managing one of the clients which is of a process control system which is of the object to be controlled.

Nakamura discloses a server for managing one of the clients which is of a production management system which is of the object to be controlled a server for managing one of the clients which is of a process control system which is of the object to be controlled [Fig 2(A), 65, col 6, lines 22-26].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mayhead to include a server for managing one of the clients which is of a production management system which is of the object to be controlled a server for managing one of the clients which is of a process control system which is of the object to be controlled as taught by Nakamura.

The ordinarily skilled artisan would have been motivated to modify Mayhead per the above for the purpose of providing a source of identical data for use in the event of failure of the primary source of data [col 6, lines 22-26].

Claim 6:

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The combination of Mayhead and Nakamura discloses the elements of claims 1 and 5 as noted above.

The combination of Mayhead and Nakamura discloses wherein each of said servers has independent settings of distributed data processing so that said database can be independently processed in inserting, updating or deleting data [Fig 2(A), 65, col 6, lines 22-26].

4. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayhead as applied to claims 1, 2, 7-9 and 16-18 in view of US Pat No. 6,202,070 issued to Nguyen et al (hereafter Nguyen).

Claims 13 and 15:

Mayhead discloses the elements of claims 1 and 7 as noted above.

Mayhead fails to disclose wherein the replication trigger generator converts an updating SQL into a propagating SQL.

Nguyen discloses wherein the replication trigger generator converts an updating SQL into a propagating SQL [col 25, lines 20-23]

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mayhead to include wherein the replication trigger generator converts an updating SQL into a propagating SQL as taught by Nguyen.

The ordinarily skilled artisan would have been motivated to modify Mayhead per the above for the purpose of generating new table primary key values [col 25, lines 20-25] .

Response to Arguments

5. Applicant's arguments filed 7/9/2004, have been fully considered but are not persuasive.

Applicant Argues:

Applicant states in the fourth paragraph on page 9 "Applicant submits that Mayhead fails to teach or suggest all of the limitations of claim 1. In particular, Mayhead does not disclose the claimed database updating processor for updating the database based on the updating information transferred from the other server."

Examiner Responds:

Examiner is not persuaded. Mayhead clearly discloses a means of storing data received from an external source. In Summary of the Invention, column 3, line 41, Mayhead discloses a disk controller which is part of the file server system. A disk controller is defined¹ as:

A special-purpose chip and associated circuitry that directs and controls reading from and writing to a computer's disk drive. A disk controller handles such tasks as positioning the read/write head, mediating between the driver and the microprocessor, and controlling the transfer of information to and from memory. Disk controllers are used with floppy disk drives and hard disks and can either be built into the system or be part of a card that plugs into an expansion slot.

The disk controller which controls the transfer of information to and from memory reads on the claimed updating processor. Examiner maintains that the disclosure by Mayhead as interpreted by the Microsoft Dictionary reads on above claim 1 limitation "a database updating processor for updating said database based on the updating information transferred from the other server."

Applicant Argues:

¹ Microsoft Computer Dictionary, Fifth Edition

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Applicant states in the first paragraph on page 10 "Since all communications occur on an intra server link, this suggests that Mayhead relates to a fundamentally different system that lacks inter server relationships as claimed. To the extent any updates are provided, this appears to be made on a broadcast base and not on a replication trigger and updates."

Examiner Responds:

Examiner is not persuaded. Applicant has misinterpreted the teachings of Mayhead. The reference to broadcast base is included in parenthesis, refer below excerpt from column 6, lines 25-45, and obviously is not related to the gist of Mayhead's invention.

Check requests are transmitted to the intra-server communication link 12 with multicast commands. A multicast is a single send operation performed at a sender to send a message to a number of receivers. (A **broadcast** is a special case of a multicast when a message is sent to all receivers). The check request specifies the object i.d. and the newly calculated object signature. The check request is serviced by the checker manager 21 where it is passed to the checker comparator 22. The comparator 22 retrieves the object signature stored in the checker store 18 for the object i.d. specified in the multicast command and then compares the retrieved signature with the newly calculated one. Depending on whether the two signatures match or not, a result EQUAL or DIFFER is transmitted by the checker manager 21 onto the intra-server communication link 12 using another multicast command. In the event that the signatures differ, the multicast command also includes a copy of the retrieved signature.

Furthermore, Mayhead clearly discloses replication triggers and updates per the following reference which is included in above office action:

The replication manager 8 controls the number and location of replicas for the replicated services, in this embodiment the file store replicas 1 and 2. In general, a non-replicated service is defined as code running as a single process on a single node of the server system which provides a client service such as a file access (by NFS in the present embodiment) or a lock service (by NLM in the present embodiment). In the case of replicated services, each replica is a member of the replicated service. All members of the same replicated service support the same interface. The replication manager is non-replicable, but each node has running on it an instance of the replication manager. The replication manager is thus distributed over the nodes of the lr file-server system, with the instances continually inter-communicating to maintain coherence, e.g. to keep track of which components are replicated, how many replicas currently exist and, for each replicated component, which replica is currently the primary.

Figure 2 item 8 also discloses the replication manager. Examiner maintains above replication manager disclosed by Mayhead reads on the claimed replication trigger. Examiner is

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also puzzled by the fact that applicant brings in arguments relating to the means of transmission when the present invention concerns the process of storing information in a primary storage device and in a backup storage device.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne P LeRoux whose telephone number is (571) 272-4022. The examiner can normally be reached on 8:00-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on (571) 272-4023. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Etienne LeRoux

5/20/2005


MOHAMMAD ALI
PRIMARY EXAMINER